

18 had HbA1c > 8.0%. A total of 42% (126/302) used basal-insulin only, 29% (88/302) bolus-insulin only, 22% (66/302) basal-bolus, 5% (16/302) premixed and 2% (6/302) other combinations. Of all respondents, 81% (246/302) had previously experienced non-severe (self-managed) hypoglycaemia (79% (59/75) in those with HbA1c < 8%, with 11% (28/246) reporting 3 events per-week, 33% (80/246) once-a-week, and 29% (72/246) once-a-month. 30% (92/302) had previously experienced severe hypoglycaemia requiring help from others, with half (46/92) reporting 1–3 such events during past year. 73% (221/302) of respondents tested blood glucose 2–5 times-daily. Of 192 respondents using basal insulin, 134 (70%) injected ≤ 1 time-a-day, whilst 30% (58/192) injected ≥ 2 times-daily. When asked about intensifying by adding bolus-insulin or switching to premix, 58% (73/126) of basal-only patients would be hesitant. Most frequent reason for hesitation was increased number of daily injections (44%, 32/73), as well as pain/discomfort of injections and risk of weight gain (both 23%; 17/73), hypoglycaemia risk (22%; 16/73), difficulty calculating bolus dose with food (21%; 15/73). **CONCLUSIONS:** Number and timing of injections, dose calculation, risk of hypoglycaemia and weight gain are barriers to insulin intensification among T2DM patients on basal insulin in Italy. Therapies addressing these may help to achieve treatment goals.

PDB88**ASSOCIATION BETWEEN KNOWLEDGE AND MEDICATION ADHERENCE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS IN PAKISTAN**Nazir SU¹, Hassali MA², Saleem F³, Bashir S⁴, Aljadhey H⁵¹School of Pharmaceutical Sciences, Penang, Malaysia, ²Universiti Sains Malaysia (USM), Pulau Pinang, Malaysia, ³Universiti Sains Malaysia, Penang, Malaysia, ⁴University of Sargodha, Sargodha, Pakistan, ⁵King Saud University, Riyadh, Saudi Arabia

OBJECTIVES: Diabetes mellitus is a serious health problem. Medication adherence is a key determinant of therapeutic success in patients with diabetes mellitus. The purpose of this study was to assess medication adherence and its potential association with diabetes related knowledge in patients with type 2 diabetes mellitus. **METHODS:** This study was carried out at the outpatient clinics of a public sector teaching hospital in Sargodha, Pakistan. Besides demographic and disease-related questions, previously validated questionnaires, Morisky Medication Adherence Scale and Michigan diabetes knowledge test was used to assess the medication adherence and diabetes related knowledge, respectively. Descriptive statistics were used to determine the demographic and disease characteristics of the patients while Spearman rank correlation was employed to measure the association between medication adherence and knowledge. **RESULTS:** Three hundred and ninety two patients were interviewed. Out of 392 patients, 245 (62.5%) of the patients had average knowledge about diabetes while 282 (71.9%) were categorized as poor adherent. Only 13 patients (3.3%) were considered as good adherent in the study. The correlation coefficient between total scores of knowledge and total medication adherence score was 0.036 ($p < 0.05$), indicating a weak correlation between knowledge scores and adherence level. **CONCLUSIONS:** Knowledge of diabetes mellitus among these patients was average; however, adherence to drug therapy was also poor. Patients' knowledge about diabetes had positive association with medication adherence. Improving diabetes knowledge of people can result in better adherence, which may result in better control of diabetes.

PDB89**DOES TREATMENT ADHERENCE CORRELATES WITH HEALTH-RELATED QUALITY OF LIFE: FINDINGS FROM A CROSS SECTIONAL ANALYSIS OF TYPE 2 DIABETES MELLITUS PATIENTS IN PAKISTAN**Nazir SU¹, Hassali MA², Saleem F³, Bashir S⁴, Aljadhey H⁵¹School of Pharmaceutical Sciences, Penang, Malaysia, ²Universiti Sains Malaysia (USM), Pulau Pinang, Malaysia, ³Universiti Sains Malaysia, Penang, Malaysia, ⁴University of Sargodha, Sargodha, Pakistan, ⁵King Saud University, Riyadh, Saudi Arabia

OBJECTIVES: Patient adherence with a therapeutic regimen predicts successful treatment and reduces the severity of negative complications. The objective of this study was to explore the relationship between Health-Related Quality of Life (HRQoL) and treatment adherence among type 2 diabetes mellitus patients in Sargodha, Pakistan. **METHODS:** The study was designed as a cross-sectional descriptive survey. Type 2 diabetic patients attending a tertiary care institute in Sargodha, Pakistan were targeted for the study. The Urdu version of the Morisky Medication Adherence Scale (MMAS-Urdu) and EuroQol Quality of Life Scale (EQ-5D) was used to assess medication adherence and HRQoL, respectively. Descriptive statistics were used for the elaboration of socio-demographic characteristics. The Spearman's Rho correlation test was used to measure the association between medication adherence and HRQoL. $P < 0.05$ was taken as significant. **RESULTS:** Three hundred and ninety two patients were approached for the study. The cohort was dominated by males ($n=222$, 56.60%) with 5.58 ± 4.09 years of history of type 2 diabetes mellitus. The majority of respondents ($n=137$, 34.90%) was categorized in age group of 51 to 60 years with mean age of 50.77 ± 9.671 years. The present study highlighted that individuals with type 2 diabetes mellitus had decreased HRQoL (0.4715 ± 0.3360) and poor medication adherence (4.44 ± 1.8). Significant, yet weak positive correlations were observed between medication adherence and HRQoL ($r=0.217$ and 0.136 for EQ-5D and EQ-VAS respectively). **CONCLUSIONS:** Although the association between adherence to therapeutic regimen and HRQoL in the present study cohort was significant, it was rated as weak, hence failed in producing an overall impression on quality of life. The study, therefore, highlights the need to identify other individual factors affecting HRQoL among type 2 diabetes mellitus patients in Pakistan.

PDB90**EXPERIENCES OF ITALIAN PATIENTS WITH DIABETES: AN ANALYSIS OF THE EUROPEAN DIABETES STUDY**Xenakis J¹, McBride M², Garfield S³¹GfK, Wayland, MA, USA, ²GfK, East Hanover, MA, USA, ³GfK Custom Research, Wayland, MA, USA**USA**

OBJECTIVES: Diabetes Mellitus is best managed through a combination of HbA1c testing, self-testing of blood glucose, and close interactions with HCPs. It has been previously shown that Italian diabetes patients have a very low rate of adherence to appropriate care, compared to those in other EU countries. In this study, we examined Italian diabetes patient preferences related to education and monitoring compared to patients in other EU5 countries. **METHODS:** A total of 3,013 diabetes patients in the EU5 were sampled. Questions focused on demographic, lifestyle, treatment, access to information, and socioeconomic status. Data were compared across countries and reported behaviors compared to current patient treatment guidelines. **RESULTS:** Despite guidelines stating that all patients must receive HbA1c testing twice per year, 42.5% of Italian patients reported receiving an HbA1c test in the past 12 months compared to 70.5% in other EU5 countries. Instead, these patients are favoring blood glucose self-monitoring, which has been previously shown to be an insufficient substitute for HbA1c testing. Italian patients also claimed that they do not want their doctor or nurse managing their diabetes more so than patients in any other tested country. Italians get diabetes information from Newspapers/Magazines, Internet, TV/Radio, Relatives/Friends more than other Europeans (37% v 34%; 33% v 28%; 30% v 26%; 25% v 21% respectively). **CONCLUSIONS:** While many Italian diabetes patients are reporting low adherence to guideline driven testing and preferences for managing their own diabetes without intervention from their HCP, change is needed. This represents a major opportunity for more targeted Italian patient management solutions built on Italian patient preferences and recognition of necessary change drivers to realize more cost-effective care. This study demonstrates how local patient preferences can impact outcomes, and therefore must be built into chronic disease management solutions for meaningful change to occur.

PDB91**SYSTEMATIC LITERATURE REVIEW OF HEALTH STATE UTILITIES FOR ADULTS WITH TYPE 1 DIABETES**Smith-Palmer J¹, Boye KS², Bae J², Norrbacka K³, Hunt B¹, Valentine WJ⁴¹Ossian Health Economics and Communications, Basel, Switzerland, ²Eli Lilly and Company, Indianapolis, IN, USA, ³Eli Lilly Finland, Helsinki, Finland, ⁴Ossian Health Economics and Communications GmbH, Basel, Switzerland

OBJECTIVES: Type 1 diabetes is often associated with complications that may have a pronounced impact on health-related quality of life (HRQoL). The aim was to conduct a systematic literature review to identify studies conducted exclusively in type 1 diabetes populations reporting utility values for diabetes-related complications. **METHODS:** Literature searches of the PubMed, EMBASE and Cochrane Library databases were performed in line with PRISMA guidance; searches used Medical Subject Heading (MeSH) terms supplemented with free-text terms. For inclusion, studies were required to be conducted exclusively in adults with type 1 diabetes, published in English from 2000 onwards, and report utility values determined using either direct or indirect assessment methods. **RESULTS:** Searches identified a total of 20 studies reporting utility values for complications in type 1 diabetes, of which a total of 9 studies used the EQ-5D, 2 used the 15D, 3 used the Quality of Well-Being questionnaire and 5 used direct methods including time trade-off and standard gamble. For patients with no complications reported utility values ranged from 0.90–0.98. Complications including stroke (reported disutility range –0.105 to –0.291), neuropathy (range –0.055 to –0.358) and blindness (range –0.132 to –0.208) were associated with among the largest decrements in utility values. Poor glycemic control was also found to be associated with lower utility values. Data gaps in the literature exist, e.g. EQ-5D utility values for amputation and end-stage renal disease are lacking. **CONCLUSIONS:** Differences between type 1 and type 2 diabetes populations mean for economic evaluation it is preferable to obtain utility values from exclusively type 1 diabetes populations. In type 1 diabetes the presence of complications has a significant detrimental impact on HRQoL, but the magnitude of the impact depends on the choice of HRQoL instrument. This will have implications on cost-effectiveness models of type 1 diabetes.

PDB92**ASSESSMENT OF UNMET HEALTHCARE NEEDS IN DIABETIC PATIENTS IN BULGARIA**Yordanova S¹, Petrova G², Gerenova J³, Orbetzova M⁴, Kamenov Z¹¹Medical University, Sofia, Bulgaria, ²Medical University - Sofia, Sofia, Bulgaria, ³Trakia University, Stara Zagora, Bulgaria, ⁴Medical University, Plovdiv, Bulgaria

OBJECTIVES: Diabetes mellitus (DM) is a chronic disease and patients have higher objective healthcare needs compared to the general population. The healthcare supportive services help the good control of diabetes, avoiding or delaying the disease complications and assuring the patient's adherence to the treatment. The objective of this study is to assess the patients reported needs of additional healthcare, psychological or family supportive care and the specific gaps in the healthcare management of the disease in Bulgaria. **METHODS:** A total of 245 adults diagnosed with DM type 1 and 2 were recruited and completed a self-report questionnaires at three hospitals - in the capital and in two main other cities. Of them 203 were complete and eligible for analysis. Unmet needs were assessed using 15-item questionnaire. The data were examined using descriptive statistics. **RESULTS:** Unmet needs were most commonly reported in the aspects of healthcare services' domains. The three most frequently endorsed items of "moderate to severe" unmet needs were: additional information about the disease from the endocrinologist (65.35%), structured information about the disease and its treatment given in the hospital from the doctor (68.81%) and needs of special foot care medical offices for patients with diabetic neuropathy (68.81%). Approximately 76% of the patients reported having unmet needs of more free test-strips for self-monitoring blood glucose, medicinal products and special healthcare services for diabetics. 73 patients (36.14%) reported high importance of the active participation of the pharmacist in community pharmacy in recognizing of probable and current drug related problems. 101 of the patients (50%) reported need of higher psychological support from their relatives